

# Work Order ID 81680

**\*81680\***

Page 1

March-16-12 1:58:29 PM

Item ID: D5953

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle, 205

Start Date: 16/03/2012 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: 12/03/16

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D5953

Rev B

100

0.00

**\*100\***

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

SL 12-06-24

8

HAAS CNC vertical machine #1

1-Machine as per folio D5953, Ensure Batch Number is entered  
2-Machine Keyway  
3-Debur & Tumble

110

QC1- Inspect dimensions to dimension sheet

0.00

**\*110\***

QC

Memo

0.00

SL 12-06-24

8

Quality Control

120

QC8- Inspect parts - second check

0.00

**\*120\***

QC

Memo

0.00

SL 12/06/25

8

Quality Control

# Work Order ID 81680

**\*81680\***

Page 2

March-16-12 1:58:29 PM

Item ID: D5953

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle, 205

Start Date: 16/03/2012 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 22/03/2012 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID Tool # Plan  
Code

Accept Reject Reject Insp.  
Qty Qty Number Stamp

130

Chemical Conversion Coat per QSI005 4.1

0.00

**\*130\***

HandFinish

Memo

0.00

Hand Finishing

8 12627

140

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

**\*140\***

Powdercoat

Memo

0.00

Powder Coating

START TIME: 1:50

OVEN TEMPERATURE:

FINISH TIME: 2:20

8 12627

150

QC3- Inspect Part Finish

0.00

**\*150\***

QC

Memo

0.00

Quality Control

8 12-6-28 JP

# Work Order ID 81680

March-16-12 1:58:29 PM

**\*81680\***

Page 3

Item ID: D5953 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Saddle, 205  
 Start Date: 16/03/2012 Start Qty: 6.00 **\*6\*** Cust Item ID:  
 Required Date: 22/03/2012 Req'd Qty: 6.00 **\*6\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Identify as per dwg & Stock Location <u>430</u>	0.00							
<b>*160*</b>									
Packaging	Memo	0.00				(8)		12-6-28	SP
Packaging									
170	QC21- Final Inspection - Work Order Release	0.00							
<b>*170*</b>									
QC	Memo	0.00							
Quality Control									

12/7/30  
 MF  
 12-06-29

# Picklist Print

March-16-12 1:58:33 PM

Page 1

Work Order ID: 81680

\*81680\*

Parent Item: D5953

\*D5953\*

Parent Item Name: Saddle, 205

Start Date: 16/03/2012

Required Date: 22/03/2012

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP Rev:E Re-Format 05-11-29 JLM  
IPP Rev:f ecn 826 06.12.06 EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007		Manufactured	No			100	Each	53.0000	1	6			

\*D6101-007\*

\*\*

Saddle Billet

Location	Loc Qty	Loc Code
MAT042	48	
79589	20	
79875	28	
MAT045	5	
70680	3	
76839	2	

83 450X mK 12/06/20

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	81680
<b>Description:</b> Inner Fwd Saddle		<b>Part Number:</b>	D5953
<b>Inspection Dwg:</b> D5953		<b>Rev:</b> B	<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
A	0.438	0.443		.440	.440	.440	.440		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	5.245	5.255		5.250	5.250	5.250	5.250		
D	6.995	7.005		7.000	7.000	7.000	7.000		
E	5.240	5.260		5.250	5.250	5.250	5.250		
F	4.745	4.755		4.750	4.750	4.750	4.750		
G	0.315	0.322		.318	.318	.318	.318		
H	1.522	1.532		1.527	1.527	1.527	1.527		
I	3.048	3.058		3.053	3.053	3.053	3.053		
J	4.575	4.585		4.580	4.580	4.580	4.580		
K	0.315	0.322		.318	.318	.318	.318		
L	0.495	0.505		.500	.500	.500	.500		
M	0.490	0.510		.496	.497	.497	.497		
N	1.615	1.635		1.630	1.630	1.630	1.630		
O	7.990	8.010		8.000	8.000	8.000	8.000		
P	2.240	2.260		2.250	2.250	2.250	2.250		
Q	0.307	0.312		.309	.309	.309	.310		
R	0.760	0.765		.760	.760	.760	.760		
S	0.490	0.510		.500	.499	.500	.500		
T	1.375	1.395		1.381	1.382	1.381	1.382		
U	2.000	2.020		2.005	2.006	2.005	2.006		
V									
W									
X									
Y									
Z									
AA									
AB									
AC									
AD									
AE									
AF									
Accept/Reject									

Measured by: JL  
Date: 12-06-23

Audited by: cmf  
Date: 12/06/25

Rev	Date	Change	Revised by	Approved
A	99.04.19	New Issue	RF	
B	02.12.13	Reformat; Added Dim. T-U & DT8682, DT8686 & DT8696 A/B	KJ/RF	
C	06.12.06	Dimensions L,N,P revised	KJ/EC	
D	07.06.15	Dimension G revised	KJ/JLM	
E	08.04.21	Dimension E revised	KJ/DD	
F	08.12.01	Dimension K revised	KJ/DD	

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	31055
<b>Description:</b> Inner Fwd Saddle		<b>Part Number:</b>	D5953
<b>Inspection Dwg:</b> D5953	<b>Rev:</b> B	<b>Page 1 of 1</b>	

Inspect dimensions highlighted on inspection sheet drawing and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				A5	A6	A7	A8		
A	0.438	0.443		.440	.440	.440	.440		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	5.245	5.255		5.250	5.250	5.250	5.250		
D	6.995	7.005		7.000	7.000	7.000	7.000		
E	5.240	5.260		5.250	5.250	5.250	5.250		
F	4.745	4.755		4.750	4.750	4.750	4.750		
G	0.315	0.322		.318	.318	.318	.318		
H	1.522	1.532		1.527	1.527	1.527	1.527		
I	3.048	3.058		3.053	3.053	3.053	3.053		
J	4.575	4.585		4.580	4.580	4.580	4.580		
K	0.315	0.322		.318	.318	.318	.318		
L	0.495	0.505		.500	.500	.500	.500		
M	0.490	0.510		.497	.497	.497	.497		
N	1.615	1.635		1.630	1.630	1.630	1.630		
O	7.990	8.010		8.000	8.000	8.000	8.000		
P	2.240	2.260		2.250	2.250	2.250	2.250		
Q	0.307	0.312		.310	.310	.309	.310		
R	0.760	0.765		.760	.760	.760	.760		
S	0.490	0.510		.499	.500	.500	.499		
T	1.375	1.395		1.382	1.382	1.382	1.382		
U	2.000	2.020		2.006	2.006	2.006	2.006		
V									
W									
X									
Y									
Z									
AA									
AB									
AC									
AD									
AE									
AF									
Accept/Reject									

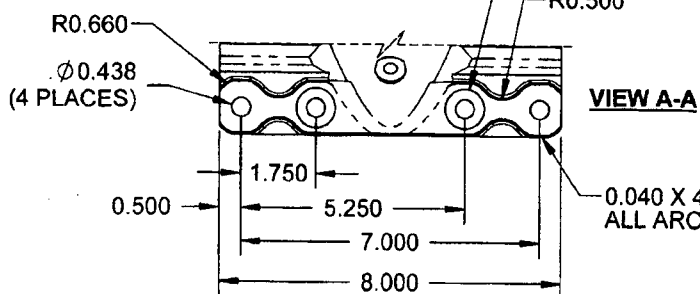
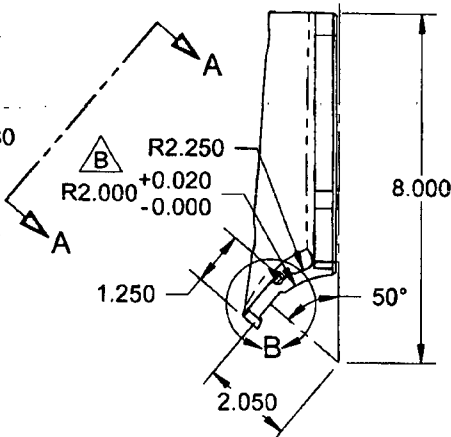
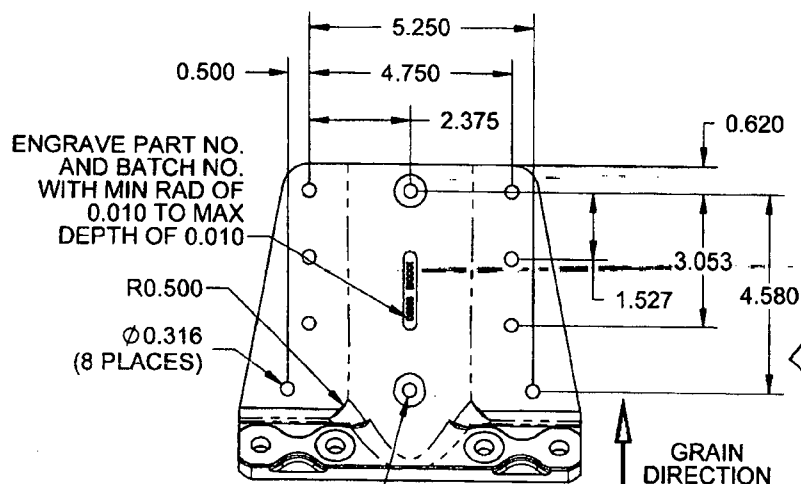
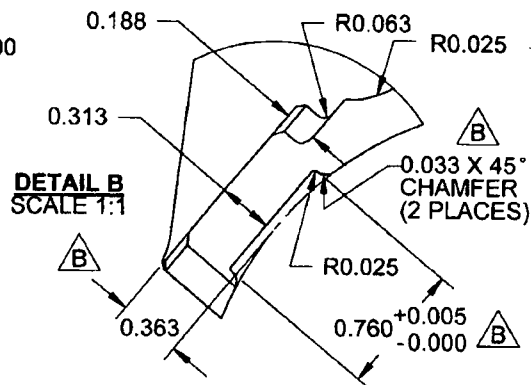
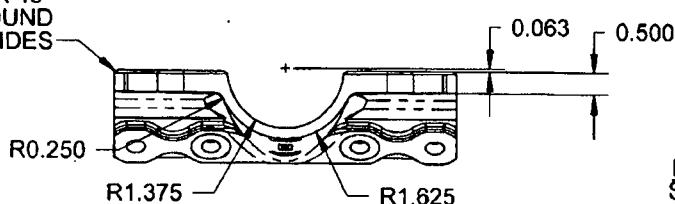
Measured by: <u>SL</u>	Audited by: <u>amf</u>
Date: <u>12-06-23</u>	Date: <u>12/06/25</u>

Rev	Date	Change	Revised by	Approved
A	99.04.19	New Issue	RF	
B	02.12.13	Reformat; Added Dim. T-U & DT8682, DT8686 & DT8696 A/B	KJ/RF	
C	06.12.06	Dimensions L,N,P revised	KJ/EC	
D	07.06.15	Dimension G revised	KJ/JLM	
E	08.04.21	Dimension E revised	KJ/DD	
F	08.12.01	Dimension K revised	KJ/DD	



DESIGN <b>BW</b>	DRAWN BY <b>CB</b>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA
CHECKED <b>LE</b>	APPROVED <b>#</b>	DRAWING NO. <b>D5953</b>
DATE <b>06.11.07</b>	TITLE <b>INNER FWD SADDLE</b>	REV. B SHEET 1 OF 1
REV A	DATE 97.05.06	DESCRIPTION NEW ISSUE
B	06.11.07	INCORPORATE DEO 9102, DEO 9079; ADD 0.363 DIMENSION; $\phi 0.316$ WAS $\phi 0.313$ ; ADD TOLERANCE TO R2.000; ADD 0.363 DIM

CHAMFER  
0.075 X 45°  
ALL AROUND  
BOTH SIDES



### D5953 INNER FWD SADDLE

#### NOTES:

- 1) MATERIAL: ALUMINUM 7075-T7351 PER QQ-A-250/12  
(MAKE FROM D6101-007 SADDLE BILLET, 7075)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.010 TO 0.020

RETURN TO  
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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

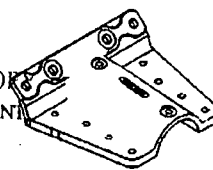
NO. **81680 MCT**



12/03/16

#### ISOMETRIC VIEW

SCALE 1:8



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# Work Order ID 83450

**\*83450\***

Page 1

Wednesday, April 18, 2012 8:42:47 AM

Item ID: D6101-007

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle Billet

Start Date: 4/18/2012 Start Qty: 30.00

**\*30\***

Cust Item ID:

Required Date: 4/25/2012 Req'd Qty: 30.00

**\*30\***

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/04/18 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
<b>Draw Nbr</b>	<b>Revision Nbr</b>								
D6101	Rev B								
100	PURCHASING	0.00							
<b>*100*</b>									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>16754</u>								
	a) Description: Alluminium billet								
	b) 7.750" x 8.250" x 2.50" thick								
	c) Tolerance on all dimensions are +0.030"/-0.000"								
	d) Grain direction along 7.750" length								
	e) Material: 7075-T7351 (QQ-A-250/12)								
	f) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
<b>*110*</b>									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								

12-04-18

Per 10/01 (3)



# Work Order ID 83450

**\*83450\***

Page 2

Wednesday, April 18, 2012 8:42:47 AM

Item ID: D6101-007

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Saddle Billet

Start Date: 4/18/2012 Start Qty: 30.00

**\*30\***

Cust Item ID:

Required Date: 4/25/2012 Req'd Qty: 30.00

**\*30\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
<b>*120*</b>									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6101								
130	Identify as per dwg & Stock Location: <u>MAT 41</u>	0.00							
<b>*130*</b>									
Packaging	Memo	0.00							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
<b>*140*</b>									
QC	Memo	0.00							
Quality Control									

12/5/17  
11205-3

**Picklist Print**

Page 1

Wednesday, April 18, 2012 8:42:52 AM

Work Order ID: 83450

\*83450\*

Parent Item: D6101-007

\*D6101-007\*

Parent Item Name: Saddle Billet

Start Date: 4/18/2012

Required Date: 4/25/2012

Start Qty: 30.00

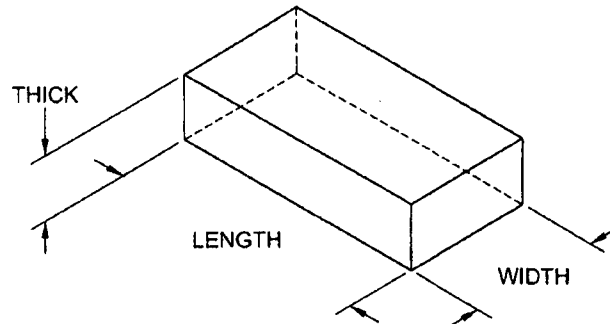
Required Qty: 30.00

Comments: IPP A: 01.05.04New IssueC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007P		Purchased	No			110	Each	0.0000	1	30			
*D6101-007P*									**				
7075-T7351 8.25X7.75X2.5													

4/25/12 (30)

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**B**

**RELEASED**  
09/07/15/W

SHOP COPY  
 RETURN TO  
 ENGINEERING  
 UNCONTROLLED COPY  
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 WITHOUT NOTICE  
 WORK ORDER  
 NO. 83450 HCS  
 12/04/18

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

**Castle Metals®**

A. M. Castle &amp; Co.

## BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No: 1289214

<b>Expédié de / Ship From:</b> A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		<b>Vendu à / Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Expédié à / Ship To:</b> WILL CALL-MONTREAL 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		<b>Livré à / Deliver To:</b> WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA			
<b>Date d'expédition / Date Shipped</b> 27-APR-2012		<b>F.O.B.</b> ORIGIN		<b>Modalités de transport / Freight Terms</b> Prepaid		<b>Transporteur / Carrier</b> MANITOULIN		<b>No du Bon de connaissance / BOL No</b> 1289214-2	

**Détails d'expédition / Shipment Details** **Destination finale / Final Destination Branch - MON**

N° de commande / Order No	N° de ligne / Line No	N° d'article / Item No	Description
2146371	2	752241.MO	2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 8.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12
<b>N° de bon de commande / Purchase Order No</b> 16754		<b>Nbre de pièces / Part Number</b> YOUR ITEM NUMBER: D6101-007	
		<b>Qté commandée / Ordered Qty</b> 30.00 PCS	<b>Qté Facturée / Invoice Qty</b> 30.0000 PCS

<b>Détails / Details</b>		<b>No de coulée / Heat Number</b>	<b>Code mec / Mech Id</b>	<b>Pièces / PCS</b>	<b>Largeur (Pouce) / Width (IN)</b>	<b>Longueur (Pouce) / Length (IN)</b>	<b>Qté expédiée / Shipped Qty(LBS)</b>
<b>N° de livraison / Delivery No :</b>	<b>Usine / Mill</b>						
117574302		467299A4		9	(32)		148.79
117574302		405872A3		9			148.79
117574302		436191		12			198.38

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Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'

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**Castle Metals®**

A. M. Castle & Co.

**BORDEREAU DE MARCHANDISES**

Page 2 of 2

Les essais sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.		
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.		
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:	Date:	Name:

## SHIP TO:

CASTLE METALS AEROSPACE  
4175 ROYAL DRIVE, SUITE 600  
KENNESAW, GA 30144

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number

4160783

## SOLD TO:

CAS AERO% A M CASTLE METALS  
ATTN:BOB OHR % ACCTS PAYABLES  
3400 NORTH WOLF RD  
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 7748		WORK PACKAGE:		CUSTOMER PART NUMBER: 752241 AMC CA-15745		SHIP RUN/LOAD ID: 101523/21		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1080685	LINE ITEM: 1	SHIP DATE: 23-APR-2009	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE			
WEIGHT SHIPPED: 8988 LB	QUANTITY: 5 PCS EST.	B/L NUMBER: 2022418		GAUGE: 2.5000 IN		WIDTH: 48.500 IN		LENGTH: 144.500 IN	

### Certified Specifications

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
GSS16100/RevG/Amd1

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CMMP 025/RevR  
EAC MS1011/RevE  
MMS 159/RevN

AMS-STD-2154  
BAC 5439/RevH  
CSTI 006/RevC  
GAMPS 9101/RevB  
PS 21211/RevK

### Test Results

Test Code: 4297

Lot: 467299A4 Cast 222

Drop 18

Ingot 1

(ASTM E8/B557)  
(EN 2002-1)

Tensile: Temper  
T7351

Dir / # Tests  
LT / 2 (Min:Max)

Ultimate KSI (MPA)  
72.8 : 73.0  
(502 : 503)

Yield KSI (MPA)  
61.3 : 61.5  
(423 : 424)

Elongation %  
11.1 : 11.1



(ASTM E1004)  
(EN 2004-1)

Conductivity %IACS : 40.6 Min  
(MS/M) : 23.5 Min

40.8 Max  
23.7 Max

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APR 27 2009

(ASTM E1251)

Chemistry:  
Actual

SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
0.10	0.20	1.5	0.02	2.5	0.20	5.7	0.04	0.01	0.01	TOT 0.05

# KAISER

## ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

### CERTIFIED TEST REPORT

Serial Number  
4160783

Lot: 470001A9 Cast 222 Drop 27 Ingot 2

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.4 : 74.4 (499 : 513)	60.3 : 63.3 (416 : 436)	11.1 : 11.2

(ASTM E1004)  
(EN 2004-1)

Conductivity %IACS :	39.8 Min	41.6 Max
(MS/M) :	23.1 Min	24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.19	1.5	0.02	2.5	0.20	5.8	0.04	0.01	0.01	TOT 0.05

Lot: 470010A0 Cast 222 Drop 29 Ingot 3

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.7 : 74.4 (501 : 513)	60.7 : 63.7 (419 : 439)	10.7 : 11.2

(ASTM E1004)  
(EN 2004-1)

Conductivity %IACS :	40.8 Min	41.2 Max
(MS/M) :	23.7 Min	23.9 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.20	1.5	0.03	2.4	0.20	5.6	0.04	0.01	0.01	TOT 0.05

#### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

RECEIVED

APR 27 2009



**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

**CERTIFIED TEST REPORT**

Serial Number  
4160783

**TEST NOTES**

7075-T7351 plate 3.001-3.500" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-1. 7075-T7351 plate 3.501-5.000" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.



RECEIVED  
APR 27 2009

**CERTIFICATION**

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF THE DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

**BILL POYNOR, LABORATORIES SUPERVISOR**



## SHIP TO:

TRANSTAR METALS  
4611 EAST 31ST STREET  
WICHITA, KS 67210

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4125515

## SOLD TO:

TRANSTAR METALS INC.  
ATTN: ACCOUNTS PAYABLE DEPT.  
970 W. 190TH STREET  
SUITE 700  
TORRANCE, CA 90502

CUSTOMER PO NUMBER: 00144136		WORK PACKAGE:		CUSTOMER PART NUMBER: 152500X557L		SHIP RUN/LOAD ID: 101252/7		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1064442	LINE ITEM: 1	SHIP DATE: 31-MAR-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE			
WEIGHT SHIPPED: 13660 LB	QUANTITY: 6 PCS EST.	B/L NUMBER: 2017102	GAUGE: 2.5000 IN		WIDTH: 55.000 IN		LENGTH: 161.000 IN		

### Certified Specifications

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
GSS16100/RevG  
PS 21211/RevK

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CSTI 006/RevC  
MIL-STD-2154

AMS-STD-2154  
BAC 5439/RevH  
DPS 4.713/RevAH  
MMS 159/RevN

### Test Results

Test Code: 4297

Lot: 405872A3 Cast 158

Drop 05

Ingot 4

(ASTM E8/B557)

Tensile: Temper  
T7351Dir / # Tests  
LT / 2 (Min:Max)Ultimate KSI (MPA)  
70.0 : 71.9  
(483 : 496)Yield KSI (MPA)  
58.3 : 60.7  
(402 : 419)Elongation %  
8.1 : 10.1

(ASTM E1004)

Conductivity %IACS :  
(MS/M) :40.7 Min  
23.6 Min41.2 Max  
23.9 Max

(ASTM E1251)

Chemistry:  
Actual

SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
0.10	0.20	1.5	0.02	2.5	0.20	5.6	0.03	0.01	0.01	TOT 0.03

RECEIVED  
APR 08 2008  
TRANSTAR METALS  
By \_\_\_\_\_

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4125515

Lot: 427571A5 Cast 158 Drop 18 Ingot 4

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.6 : 72.3 (494 : 499)	60.1 : 61.6 (414 : 425)	11.6 : 11.8

(ASTM E1004)

Conductivity %IACS :	41.4 Min	41.9 Max
(MS/M) :	24.0 Min	24.3 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.15	1.4	0.02	2.4	0.21	5.7	0.02	0.01	0.01	TOT 0.03

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 <del>MPA</del>	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

### TEST NOTES

Metal represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND  
MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS  
INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD  
GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL,  
WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS  
OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR



T-504 P041/058 F-466

3165223453

03-13-'09 07:11 FROM-a m castle metals

## CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS  
Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

*Malcolm Murphy*  
Malcolm Murphy  
Director of Manufacturing Davenport Works

*Kenton P. Young*  
Kenton P. Young  
Quality Assurance Manager

1005842	0	Invoice No.	Alcoa No.	Item	Page
Ship Date	B.L. No.	00000	1000078823-1		1
2009-03-06	3535272				
P.O. No./Govt Co.	Contract No.	Customer	Alcoa Item	Mfg Order	
23-14882		CASTLE A M	G041005634R10	DS-78823-02-1	

Ship To: A M CASTLE & COMPANY  
3050 SOUTH HYDRAULIC  
WICHITA 67216 KS

Item Description  
2.5 IN TK (+.075 -.075) X 48.5 IN W (+.3125 -  
0.000) X 144.5 IN LN (+.5 -0.0) CAT D 164168 (N) A/T 7075-  
T7351 RECTANGLE MILL FINISH, US1 3MM DEAD ZONE REQ'D BOTH SIDES.  
SAVED AC 6879 EXC MRK A97075-60 REV 25 AMS-QQ-A-250/12 IS 2007 AMS-  
STD-2154 EXC MRK AMS4078 REV G EXC MRK ASTMB209  
REV 07 ASTMB594 REV 06 BSS7055 REV A  
EXC MRK MMS159 REV N PS21211 REV K ((MARKED))  
KRAFT PAPER INTERLEAVED  
MAX GROSS SKID WGT: 4500 LB QUAN TOL +/-  
25 % US1 CL A 3 MM CQR 0137890 REV 19 CUST REQ 09-03-  
06 \*\*\* W/E 09-03-14 \*\*\*

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Serl
1	717895	436191	3547	2	PC	

Notes for CQR: 0137890.19  
PRODUCT PRODUCED TO THE REQUIREMENTS OF MIL-STD-2154 ALSO MEET THE REQUIREMENTS OF AMS-STD-2154. PRODUCT PRODUCED TO THE  
REQUIREMENTS OF AMS-STD-2154 ALSO MEET THE REQUIREMENTS OF MIL-STD-2154.  
THIS MATERIAL HAS BEEN ULTRASONICALLY INSPECTED FULLY IMMERSION - TYPE I.  
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/12 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/12F. PRODUCT  
PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/12 F ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/12.  
THIS MATERIAL HAS BEEN ULTRASONICALLY INSPECTED FULLY IMMERSION - TYPE I.

CQR: 0137890.19 -Specification Limits

Temp	Dir		UTS		TYS		EL4D		Other	Other	Total	Aluminum
			KSI	KSI	KSI	PCT	PCT	PCT				
T7351	Long Transv.	Max			63.9							
		Min	66.0		52.0		6					
T7351	Elec. Cond. (EC)	& MIN	38.0		PCT							
Chemical Composition			SI	FE	CU	MN	MG	CR	ZN	TI	Each	Total
		Max	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15
		Min			1.2		2.1	0.18	5.1			
Alloy 7075												

CASTLE METAL 3-WIC  
DATE REC'D 3-9-09  
REC'D FROM 5717  
APPROVED BY 6

T-504 P042/058 F-466

3165223453

03-13-'09 07:11 FROM-a m castle metals

## CERTIFIED INSPECTION REPORT

Alcoa Inc.

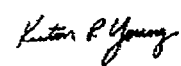
PITTSBURGH, PA DAVENPORT WORKS  
Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Per:

  
Malcolm Murphy

Director of Manufacturing Davenport Works

  
Kanton P. Young  
Quality Assurance Manager

1005842	0				Page 2
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item	
2009-03-06	3535272	00000	1000078823-1		
P.O. No./Govt Contract No.	Customer	Alcoa Item	Mfg Order		
23-14882	CASTLE A M G043005634R10	DS-78823-02-1			

CQR: 0137890.19 - Specification Limits (cont.) -----  
Lot: 436191 - Mechanical, Physical, Metallography, Quantometer Results -----

Temp	Dir	No-> Test	UTS KSI	TYS KSI	EL4D PCT
T7351	Long Transv.	3	69.3	58.1	10.4
			69.6	58.3	10.4
			69.7	58.4	10.3

T7351 Elect Cond %IACS 40.7 40.9 40.9 PCT

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9167056	Actuals	0.07	0.28	1.6	0.03	2.5	0.19	5.7	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

